

REMARKS/ARGUMENTS

This is a Response to the Office Action mailed January 4, 2007, in which a three (3) month Shortened Statutory Period for Response has been set, due to expire April 4, 2007. Twenty (20) claims, including two (2) independent claims, were paid for in the application. Claims 1-14 and 19-20 were canceled and claims 21-30 were added by the Applicants in their August 18, 2006, response to the Office Action of May 18, 2006. Claim 15 is currently amended. Claims 16, 18, 22, 24, 26, 28, and 30 are canceled. New claims 31-34 have been added. No new matter has been added to the application. The Director is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090. Upon entry of the amendments herewith, claims 15, 17, 21, 23, 25, 27, 29, and 31-34 remain pending.

1. Rejections Under 35 U.S.C. § 103(a)

In the Office Action, at paragraph 3, claims 15, 16, and 21-22 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Uno et al.* (U.S. Patent 6,449,239), hereinafter *Uno '239*. It is well-established at law that, for a proper rejection of a claim under 35 U.S.C. § 103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements and/or features of the claim at issue. See, e.g., *In Re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

a. Independent Claim

Claim 15, as amended, is allowable for at least the reason that *Uno '239* does not disclose, teach, or suggest at least the feature of a “dielectric layer located on the side of a light incidence plane with respect to the associated recording layer containing an oxide selected from a group consisting of Ta_2O_5 or TiO_2 as a primary component and nitrogen as an additive,” as recited in claim 15 (emphasis added).

With respect to dielectric layers, *Uno '239* discloses “a material of the protective layers 2 and 8, in addition to sulfide such as ZnS or the like, oxide such as SiO₂, Ta₂O₅, Al₂O₃, or the like, nitride such as Ge--N, Si₃N₄, Al₃N₄, or the like, or nitrogen oxide such as Ge--O--N, Si--O--N, Al--O--N, or the like, dielectric such as carbide, fluoride, or the like, or suitable combinations thereof have been proposed” (column 2, lines 19-26). *Uno '239* initially described the protective layers 2 and 8 as being one of the above listed compounds.

Uno '239 then discloses protective layers 2 and 8 as being of “suitable combinations thereof.” However, *Uno '239* does not go so far as to provide any description of what constitutes a “suitable combination.” Rather, *Uno '239* is completely silent as to what constitutes a “suitable combination.” In contrast, claim 15 is directed to a dielectric consisting of Ta₂O₅ or TiO₂ as a primary component and nitrogen as an additive.

The Applicants' specification states that when an element is a primary component, the content of the element is maximum among the elements contained therein (paragraph 20 of the published application, 2004/0076907). Thus, claim 15 recites that Ta₂O₅ or TiO₂ is a primary component (maximum) among the elements contained in the dielectric and that nitrogen is an additive (that is, therefore, less than maximum). Applicants respectfully assert that they are entitled to be their own lexicographer (*In re Castaing*, 429 F.2d 461, 166 U.S.P.Q. 550, 551 (C.C.P.A. 1970)). Accordingly, the Applicants are allowed to define terms, regardless of common or technical meaning, so long as the meaning is clear and the definition is not repugnant to the normal usage of the term. In the specification of the present invention, the term “primary component” is clearly defined in a permissible manner. Applicants respectfully request that the Examiner give due consideration to the Applicants' use of the permissibly defined term “primary component” in view of other references, and in particular to *Takada*, which fails to distinguish the relative amounts of any elements used in a dielectric layer.

Since *Uno '239* is completely silent as to what constitutes a “suitable combination,” in contrast with claim 15 directed to a dielectric consisting of Ta₂O₅ or TiO₂ as a primary component and nitrogen as an additive, *Uno '239* fails to disclose, teach or suggest every element of the Applicants' claimed invention. Therefore, a *prima facie* case establishing an

obviousness rejection by *Uno '239* has not been made. Thus, claim 15 is not obvious under *Uno '239* and the rejection should be withdrawn.

b. Dependent Claims 16 and 21-22

Because independent claim 15 is allowable over the cited art of record, dependent claims 21-22 (which depend from independent claim 15) are allowable as a matter of law for at least the reason that the dependent claims 21-22 contain all features/elements of independent claim 15. See, e.g., *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Accordingly, the rejection to these claims should be withdrawn.

Claim 16 is canceled without prejudice, waiver, or disclaimer, and therefore, the rejection to this claim is rendered moot. Applicants take this action merely to reduce the number of disputed issues and to facilitate early allowance and issuance of other claims in the present application. Applicants reserve the right to pursue the subject matter of these canceled claims in a continuing application, if Applicants so choose, and do not intend to dedicate any of the canceled subject matter to the public.

2. Rejections Under 35 U.S.C. § 103(a)

In the Office Action, at paragraph 4, claims 15, 16, and 21-22 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Uno WO 02/2978* (which corresponds to U.S. Publication 2004/0013069, hereinafter *Uno '069*) in view of *Sakaue et al.* (U.S. Publication 2002/0168587), hereinafter *Sakaue '587*. For convenience, references to the above-identified *Uno WO 02/2978* and *Uno '069* will be made only with respect to *Uno '069*. It is well-established at law that, for a proper rejection of a claim under 35 U.S.C. § 103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements and/or features of the claim at issue. See, e.g., *In Re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

a. Independent Claim 15

Claim 15, as amended, is allowable for at least the reason that the proposed combination of *Uno '069* (and therefore *Uno WO 02/2978*) in view of *Sakaue '587* does not disclose, teach, or suggest at least the feature of a “dielectric layer located on the side of a light incidence plane with respect to the associated recording layer containing an oxide selected from a group consisting of Ta_2O_5 or TiO_2 as a primary component and nitrogen as an additive,” as recited in claim 15 (emphasis added).

Uno '069 discloses that “interface layers 4 and 6 may be formed of a material providing the above-described functions. Specifically, *usable exemplary materials include, as a main component*, nitrides such as Ge--N, Ge--Si--N, Ge--Cr--N, Ge--Mn--N, Cr--N, Si--N, Al--N, Nb--N, Mo--N, Ti--N, Zr--N, Ta--N and the like; nitrides-oxides such as Ge--O--N, Cr--O--N, Si--O--N, Al--O--N, Nb--O--N, Mo--O--N, Ti--O--N, Zr--O--N, Ta--O--N and the like; oxides such as Si--O, Al--O, Ti--O, Ta--O, Zr--O, and the like; carbides such as Ge--C, Cr--C, Si--C, Al--C, Ti--C, Zr--C, Ta--C and the like; fluorides such as Si--F, Al--F, Ca--F and the like; derivatives thereof; and any combination thereof. Especially, use of a nitride or a nitride-oxide as a main component is preferable since such a material generally realizes formation of a fine, dense layer, and thus noticeably provides the above-described effects” (paragraph 0049, emphasis added). *Uno '069* fails to disclose Ta_2O_5 or TiO_2 as a primary component. *Uno '069* also fails to disclose *nitrogen as an additive*. Thus, *Uno '069* fails to disclose, teach or suggest every element of the Applicants’ claimed invention.

Sakaue '587 also fails to disclose, teach or suggest at least Ta_2O_5 or TiO_2 as a primary component and *nitrogen as an additive* for at least the following reasons. Although *Sakaue '587* discloses “film forming conditions when using an oxide or nitrooxide of Ta for the second dielectric layer as in the present invention were as follows: Using a sputtering target of Ta_2O_5 and a mixed gas of Ar and O_2 (with 10% O_2 concentration) as the film forming gas, a 50 nm Ta oxide film was formed” (paragraph 0061), this is not expressly disclosing Ta_2O_5 or TiO_2 as a primary component. Furthermore, nitrogen is not disclosed as an additive. Thus, *Sakaue '587* fails to disclose, teach, or suggest every element of the Applicants’ claimed invention. Accordingly, even if the *Uno '069* dielectric is modified with the *Sakaue '587* dielectric, the

modified dielectric layer is not Ta₂O₅ or TiO₂ as a primary component and nitrogen as an additive.

Accordingly, the proposed combination of *Uno '069* in view of *Sakaue '587*, where the *Uno '069* dielectric is formed using the sputtering of Ta₂O₅ disclosed in *Sakaue '587*, does not disclose at least the claimed above-recited limitations of claim 15. That is, the proposed combination of *Uno '069* in view of *Sakaue '587* fails to disclose, teach or suggest a “dielectric layer ... consisting of Ta₂O₅ or TiO₂ as a primary component and nitrogen as an additive,” as recited in claim 15 (emphasis added). Therefore, a *prima facie* case establishing an obviousness rejection by *Uno '069* in view of *Sakaue '587* has not been made. Thus, claim 15 is not obvious under the proposed combination of *Uno '069* (and therefore *Uno WO 02/2978*) in view of *Sakaue '587* and the rejection should be withdrawn.

b. Dependent Claims 16 and 21-22

Because independent claim 15 is allowable over the cited art of record, dependent claims 21-22 (which depend from independent claim 15) are allowable as a matter of law for at least the reason that the dependent claims 21-22 contain all features/elements of independent claim 15. See, e.g., *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Accordingly, the rejection to these claims should be withdrawn.

Claim 16 is canceled without prejudice, waiver, or disclaimer, and therefore, the rejection to this claim is rendered moot. Applicants take this action merely to reduce the number of disputed issues and to facilitate early allowance and issuance of other claims in the present application. Applicants reserve the right to pursue the subject matter of these canceled claims in a continuing application, if Applicants so choose, and do not intend to dedicate any of the canceled subject matter to the public.

3. Rejections Under 35 U.S.C. § 103(a)

In the Office Action, at paragraph 5, claims 15-18 and 21-30 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Shuy et al.* (U.S. Publication 2001/0021160), hereinafter *Shuy '160*, in view of *Sakaue '587* and *Takaoka et al.* (U.S. Patent 4,682,321),

hereinafter *Takaoka* '321. It is well-established at law that, for a proper rejection of a claim under 35 U.S.C. § 103 as being obvious based upon a combination of references, the cited combination of references must disclose, teach, or suggest, either implicitly or explicitly, all elements and/or features of the claim at issue. See, e.g., *In Re Dow Chemical*, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988), and *In re Keller*, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

a. Independent Claim

Claim 15, as amended, is allowable for at least the reason that the proposed combination of *Shuy* '160 in view of *Sakaue* '587 and *Takaoka* '321 does not disclose, teach, or suggest at least the feature of a “dielectric layer located on the side of a light incidence plane with respect to the associated recording layer containing an oxide selected from a group consisting of Ta_2O_5 or TiO_2 as a primary component and nitrogen as an additive,” as recited in claim 15 (emphasis added).

Shuy '160 fails to disclose, teach or suggest the above-recited feature of claim 15, as acknowledged by the Office Action at page 4.

Sakaue '587 also fails to disclose, teach or suggest at least Ta_2O_5 or TiO_2 as a primary component and nitrogen as an additive for at least the following reasons. Although *Sakaue* '587 discloses “film forming conditions when using an oxide or nitrooxide of Ta for the second dielectric layer as in the present invention were as follows: Using a sputtering target of Ta_2O_5 and a mixed gas of Ar and O_2 (with 10% O_2 concentration) as the film forming gas, a 50 nm Ta oxide film was formed” (paragraph 0061), this is not expressly disclosing Ta_2O_5 or TiO_2 as a primary component. Furthermore, nitrogen is not disclosed as an additive. Thus, *Sakaue* '587 fails to disclose, teach, or suggest every element of the Applicants' claimed invention. Accordingly, even if *Shuy* '160 is modified with the *Sakaue* '587 dielectric, the modified dielectric layer is not Ta_2O_5 or TiO_2 as a primary component and nitrogen as an additive.

Takaoka '321 also fails to disclose, teach or suggest at least Ta_2O_5 or TiO_2 as a primary component and nitrogen as an additive.

Accordingly, the proposed combination of *Shuy* '160 in view of *Sakaue* '587 and *Takaoka* '321 does not disclose at least the claimed limitations of a “dielectric layer located on

the side of a light incidence plane with respect to the associated recording layer containing an oxide selected from a group consisting of Ta_2O_5 or TiO_2 as a primary component and nitrogen as an additive,” as recited in claim 15 (emphasis added). Therefore, a *prima facie* case establishing an obviousness rejection by *Shuy '160* in view of *Sakaue '587* and *Takaoka '321* has not been made. Thus, claim 15 is not obvious under the proposed combination of *Shuy '160* in view of *Sakaue '587* and *Takaoka '321* and the rejection should be withdrawn.

b. Dependent Claims 16-18 and 21-30

Because independent claim 15 is allowable over the cited art of record, dependent claims 17, 21, 23, 25, 27, and 29 (which depend from independent claim 15) are allowable as a matter of law for at least the reason that the dependent claims 17, 21, 23, 25, 27, and 29 contain all features/elements of independent claim 15. See, e.g., *In re Fine*, 837 F.2d 1071 (Fed. Cir. 1988). Accordingly, the rejection to these claims should be withdrawn.

Claims 16, 18, 22, 24, 26, 28, and 30 are canceled without prejudice, waiver, or disclaimer, and therefore, the rejection to these claims is rendered moot. Applicants take this action merely to reduce the number of disputed issues and to facilitate early allowance and issuance of other claims in the present application. Applicants reserve the right to pursue the subject matter of these canceled claims in a continuing application, if Applicants so choose, and do not intend to dedicate any of the canceled subject matter to the public.

4. Obviousness-Type Double Patenting Rejections

a. Pending Applications

In the Office Action, the claims stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being obvious over:

U.S. Application No. 10/406,109 in view of *Sakaue '587* or *Uno '239*, paragraph 7;
U.S. Application No. 10/423,686 in view of *Sakaue '587* or *Uno '239*, paragraph 8;
U.S. Application No. 10/637,407 in view of *Sakaue '587* or *Uno '239*, paragraph 11;

U.S. Application No. 10/748,979 in view of *Sakaue* '587 or *Uno* '239, paragraph 13;
U.S. Application No. 10/717,831, paragraph 14;
U.S. Application No. 10/818,324 in view of *Sakaue* '587 or *Uno* '239, paragraph 15;
U.S. Application No. 10/764,805 in view of *Sakaue* '587 or *Uno* '239, paragraph 17;
U.S. Application No. 10/613,525 in view of *Sakaue* '587 or *Uno* '239, paragraph 18; and
U.S. Application No. 10/612,615 in view of *Sakaue* '587 or *Uno* '239, paragraph 19.

The above-listed applications are currently pending according to the U.S. Patent Information and Retrieval (PAIR) database. As noted by the Examiner, a terminal disclaimer may be used to overcome a provisional non-statutory obviousness-type double patenting rejection. The Applicants will consider filing a terminal disclaimer in the present application if one or more of these co-pending applications issue before the present application, and if the present application is still pending at that point. Otherwise, it is respectfully submitted that since none of these other co-pending applications have yet issued, the present application can be passed into allowance and issued without the filing of a terminal disclaimer. A terminal disclaimer may then be filed, if appropriate, in one or more of these other co-pending applications prior to the issuance of such other co-pending applications.

Accordingly, the Applicants respectfully request that the provisional obviousness-type double patenting rejection be withdrawn and that the pending claims be allowed. The Examiner is requested to telephone the undersigned attorney if any of the co-pending applications have issued prior to the present application so that the Applicants may file a terminal disclaimer if appropriate, or respond to the properness of a rejection of the claims of the pending application with respect to any issued claims of the co-pending applications, to expedite prosecution of the present application. Applicants are prepared to file a terminal disclaimer should any one of the co-pending applications issue as a patent and if the subject matter of the claims of such issuing patents is properly subject to a non-statutory obviousness-type double patenting rejection.

b. Abandoned Applications

In the Office Action, the claims stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being obvious over:

U.S. Application No. 10/608,814 in view of *Sakaue* '587 or *Uno* '239, paragraph 12.

The above-listed application is abandoned according to the PAIR database. Accordingly, the Applicants respectfully request that the obviousness-type double patenting rejection be withdrawn and that the pending claims be allowed.

c. Applications Issued To Patent or Notice of Allowance Mailed

In the Office Action, the claims stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being obvious over:

U.S. Application No. 10/444,172 in view of *Sakaue* '587 or *Uno* '239, paragraph 9;

U.S. Application No. 10/425,571 in view of *Sakaue* '587 or *Uno* '239, paragraph 10; and

U.S. Application No. 10/808,628 in view of *Sakaue* '587 or *Uno* '239, paragraph 16.

The above-listed applications have issued to patent or are applications for which a Notice of Allowance has been issued according to the PAIR database. As noted by the Examiner, a terminal disclaimer may be used to overcome a provisional non-statutory obviousness-type double patenting rejection. The Applicants will consider filing a terminal disclaimer in the present application when the claims of the present case have been determined to be allowable and if the subject matter of the claims of such issuing patent is properly subject to a double patenting rejection in view of the cited U.S. Patents.

5. Conclusion

In light of the above amendments and remarks, Applicants respectfully submit that all objections and/or rejections have been traversed, rendered moot, and/or accommodated, and that all pending claims 15, 17, 21, 23, 25, 27, 29, and 31-34 are allowable. Applicants, therefore, respectfully request that the Examiner reconsider this application and timely allow all pending claims. The Examiner is encouraged to contact Mr. Armentrout by telephone to discuss the above and any other distinctions between the claims and the applied references, if desired. If the Examiner notes any informalities in the claims, he is further encouraged to contact Mr. Armentrout by telephone to expediently correct such informalities.

Respectfully submitted,
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